

Notice of Allowability

Application No.

09/696,220

Applicant(s)

KOKURA ET AL.

Examiner

Walter B. Aughenbaugh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to After Final Amendment filed April 14, 2005.
2. ☒ The allowed claim(s) is/are 1-5,7-11 and 15-17.
3. ☒ The drawings filed on October 26, 2000 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 7/21/2003
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 05/10/2005.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An extension of time under 37 CFR 1.136(a) is required in order to make an examiner's amendment which places this application in condition for allowance. During a telephone conversation conducted on May 10, 2005, Joseph A. Rhoa requested an extension of time for 3 MONTH(S) and authorized the Director to charge Deposit Account No. 14-1140 the required fee of \$570 (\$1,020 for three-month extension minus \$450 for two-month extension paid on April 14, 2005) for this extension and authorized the following examiner's amendment. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3. Authorization for this examiner's amendment was given in a telephone interview with Joseph A. Rhoa on May 10, 2005.

4. The application has been amended as follows:

In claim 1, line 6, replace "formed" with --that is--, insert "the reflective pixel electrode" between "below" and "and", replace "in contact" with --contacting--; in line 7, delete "with", replace the first "and" with --wherein said film comprising molybdenum nitride is also--, insert --the interlayer insulator-- between "above" and the second "and"; in line 8, insert --film comprising-- between "the" and "molybdenum", delete "located", insert --the reflective pixel

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electrode and the interlayer insulator-- between “between” and “and”; in line 9, replace “a” with --the--; in line 10, insert --film comprising-- immediately before “molybdenum”, replace “located over” with --above the top surface of the interlayer insulator--, replace “a” with --the--; in line 11, replace “a” with --the--, insert --film comprising-- between the first “the” and “molybdenum”, replace “located under” with --below the reflective pixel electrode--.

In claim 7, line 6, insert --film comprising-- between the second “the” and “molybdenum”, replace “an” with --the--; in line 10, delete “is formed on the laminated layer so as to”, replace “contact” with --contacts--; in line 11, insert --film comprising-- immediately before “molybdenum”.

In claim 11, line 7, replace “so” with --such--; in line 9, replace “an” with --the--.

In claim 15, lines 3-4, replace “located over” with --above the film comprising molybdenum nitride--.

In claim 16, line 3, replace “located over” with --above the film comprising molybdenum nitride--, in line 4, insert --film comprising-- between “the” and “molybdenum”.

In claim 17, line 1, replace “claim 11” with --claim 12--; line 3, replace “located over” with --above the film comprising molybdenum nitride--.

In the abstract, line 6, delete “so that the MoN film can”; delete lines 7 and 8.

Allowable Subject Matter

5. Claims 1-5, 7-11 and 15-17 are allowed.

Reasons for Allowance

6. The following is an examiner’s statement of reasons for allowance:

The prior art of record fails to teach or suggest a liquid crystal display (LCD) comprising a film comprising molybdenum nitride that is immediately below the reflective pixel electrode of the LCD and contacting the reflective pixel electrode, wherein the film comprising molybdenum nitride is also above the interlayer insulator of the LCD and contacting the interlayer insulator so that the film comprising molybdenum nitride is at least partially between the reflective pixel electrode and the interlayer insulator and contacting each of the reflective pixel electrode and the interlayer insulator so that the bottom surface of the film comprising molybdenum nitride is above the top surface of the interlayer insulator and contacting the top surface of the interlayer insulator and the top surface of the film comprising molybdenum nitride is below the reflective pixel electrode and contacting the reflective pixel electrode. Mitsui et al. fails to teach a film comprising molybdenum nitride. One of ordinary skill in the art would not have been motivated to combine the teachings of Lee with those of Mitsui et al. to construct the claimed LCD because Lee teaches that the metal nitride barrier layer (item 49) is deposited on the gate electrode (item 45, col. 7, lines 16-36), so if Lee was combined with Mitsui et al., one of ordinary skill in the art would have deposited the metal nitride barrier layer (item 49) of Lee on the gate electrode of Mitsui et al. (item 33), not on the reflection electrode of Mitsui et al. (item 38) as proposed in previous Office Actions. One of ordinary skill in the art would not have been motivated to combine the teachings of Lee with those of Mitsui et al. as proposed in previous Office Actions also because Mitsui et al. does not teach that anodic oxidation on the bottom of the reflection electrode (item 38) is a problem. Furthermore, Lee does not explicitly teach molybdenum nitride as a suitable material for the barrier layer (item 49).

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7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is 571-272-1488. The examiner can normally be reached on Monday-Thursday from 9:00am to 6:00pm and on alternate Fridays from 9:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Walter B. Aughenbaugh
05/10/05

WBA


HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

5/11/05